

REMARKS/ARGUMENTS

In view of the foregoing amendments and following remarks, Applicants respectfully request reconsideration of the pending claims.

Claims 1 – 3 and 5 -7 have been rejected under 35 U.S.C. § 112, first paragraph, for including the term “alkalylin specie”. As suggested by the Examiner, Claims 1 and 5 have been amended to replace the term alkalylin specie with the term basic substance. Claims 5 and 6 have been rejected because Claim 6 recites that the inorganic compound recited in Claim 5 can be phenyl boronic acid, which the Examiner alleges is an organic compound. Claim 6 has been amended to delete phenyl boronic acid. Claim 2 has been amended to include phenyl boronic acid as an organic polymer.

The Examiner has asserted that an enablement issue is raised because the specification contains no discussion on the reaction mechanism for the attachment of the polysiloxane or phenyl boronic acid on the carbon fibers. However, the Applicant does not have the burden of describing the exact processes by which the polymers are coated onto the carbon fibers. Rather, the Applicant has to describe how to make and use the claimed invention. Here, the specification is replete with discussions regarding how the polymers, both inorganic and organic include ionizable moieties that bond to the carbon fibers. See for example, page 5 of the instant application. From these discussions, one of ordinary skill in the art would know how to make and use the claimed invention.

Claims 1 – 3 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. Patent No. 3,926,761 to Sera et al. and MODIFICATION OF CARBON FIBER SURFACES BY ELECTROCHEMICAL REDUCTION OF ARYL DIAZONIUM SALTS: APPLICATION TO CARBON EPOXY COMPOSITES, to Delamar et al. (“the Delamar reference”). Claims 5 – 7 have also been rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Sera and the Delamar reference.

Sera is generally directed to a process of coating a metal substrate with a polymeric binder using an electrolytic bath comprising a sparingly water-soluble alkaline earth metal molybdate and a polycarboxylic acid binder. There is no disclosure or suggestion of plating the

polymeric binder on a carbon substrate. Sera teaches that it is essential in the invention to use a sparingly water-soluble alkaline earth metal molybdate in the bath composition.

Delamar describes a process of electrolytically coating a carbon fiber utilizing an aprotic or acidic medium comprising an aryl diazonium salt. Delamar further teaches that coating in an acidic medium permits adhesion between the fiber and the resins.

In order to maintain an obviousness rejection there must be some suggestion or motivation to combine the references. In the present case, one of ordinary skill in the art would not be motivated to combine the references for several reasons.

First, the substrates to be coated in Delamar and Sera are completely different from each other, and as a result, require two completely different processes. As noted above, Sera describes a process for depositing a polymeric layer on a metal substrate whereas Delamar is directed to a process for depositing a polymeric layer on a carbon fiber. These two substrates are completely different from each other, and consequently there can be no expectation that the two processes could be interchangeable for the two disparate substrates. As such, one of ordinary skill in the art would not be motivated to use the bath of Sera to deposit a polymeric material on a carbon fiber. The only suggestion to do such can only be found in Applicants' own teachings, which is impermissible.

Additionally, Sera and Delamar also utilize bath chemistries that are completely different from each other. Specifically, Sera teaches utilizing a basic bath chemistry for coating a metal substrate whereas Delamar teaches using an acidic bath for coating a carbon fiber. Further, Sera teaches a bath comprising a sparingly water-soluble alkaline earth metal molybdate for depositing a polymeric layer on a metal substrate. In contrast, Delamar teaches that its acidic bath "permits to improve the adhesion between the fiber and the matrix. See pg. 806. The Examiner has merely cited Delamar for the teaching of coating carbon fibers while completely ignoring the other teachings in Delamar regarding the specific bath chemistry that is taught in Delamar for coating the carbon fiber. To do such is inappropriate. Thus, because the two baths are completely different from each other chemically, one of ordinary skill in the art would not be motivated to use the basic bath of Sera, which is directed to coating metal substrates, for coating the carbon fibers of Delamar.

New Claims 9 – 15 have been added. Support for Claims 9 – 15 can be found throughout the specification, for example in FIG. 2 and in the description on pages 8 – 9.

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In view of the foregoing remarks and amendments, it is respectfully submitted that the rejections under 35 U.S.C. § 102, 103, and 112 have been overcome, and that the pending claims are now in condition for immediate allowance.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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